The listing of claims will replace all prior versions and listings of claims in the application:

Listing of the Claims

1. (canceled)

2. (canceled)

3. (canceled)

4. (canceled)

5. (canceled)

6. (canceled)

7. (canceled)

8. (canceled)

9. (canceled)

10. (withdrawn) The apparatus of claim 9, wherein the single point level sensor comprises:

    a. a float;

    b. a magnet associated with the float generating a magnetic field; and

    c. a magnetic switch positioned in the inside surface of the trough substantially near or at the threshold position, wherein the float floats on the surface of the

media coating fluid; and wherein when the level of the media coating fluid moves toward to the threshold position, the magnetic switch is activated by the magnetic field of the magnet, thereby generating an output signal indicating the level of the media coating fluid.

11. (withdrawn) The apparatus of claim 10, wherein the magnetic switch is a Hall effect switch.

12. (withdrawn) The apparatus of claim 10, wherein the magnetic switch is a reed switch.

13. (withdrawn) The apparatus of claim 9, wherein the single point level sensor comprises an optical sensor.

14. (withdrawn) The apparatus of claim 9, wherein the single point level sensor comprises an ultrasonic sensor.

15. (withdrawn) The apparatus of claim 9, wherein the single point level sensor comprises a thermistor.

16. (withdrawn) The apparatus of claim 9, wherein the single point level sensor comprises a capacitor.

17. (canceled)

18. (canceled)

19. (canceled)

20. (canceled)

21. (withdrawn) The apparatus of claim 1, further comprising an optical sensor for detecting the presence of the supply item.

22. (withdrawn) The apparatus of claim 21, wherein the optical sensor comprises a spring-loaded arm.

23. (canceled)

24. (currently amended) A fluid level detection sensor for measuring a media coating fluid level in a media coating system, wherein the media coating system has an applicator with a trough to contain the media coating fluid and the fluid level detection sensor is located within the applicator, comprising:

a. a first probe made of conducting material having a connecting end, a measuring end and a body there between;

b. a second probe made of conducting material having a connecting end, a measuring end and a body therebetween, wherein the first probe and the second probe are spaced apart from each other such that an impedance between the measuring end of the first probe and the measuring end of the second probe can be measured;

c. an oscillator having an output, wherein the output is electrically coupled to the connecting end of the first probe; and

d. a detector ~~having~~ comprising:

a. an input and an output, wherein the input is electrically coupled to the output of the oscillator and the connecting end of the first probe for

receiving signal related to the measured impedance between the measuring end of the first probe and the measuring end of the second probe and the output generates an output signal[[.]];

b. a field-effect transistor having a drain, a gate and a source, wherein the source of the field-effect transistor is grounded and the gate is electrically coupled to the output of the oscillator; and

c. a frequency discriminator having an input electrically coupled to the drain of the field-effect transistor and an output, wherein the field-effect transistor receives an output signal having a frequency from the oscillator output and allows the output signal to pass if the amplitude of the output signal is greater than the gate threshold voltage, and the frequency discriminator receives the output signal and at the output generates a logic low if the frequency of the oscillator output is higher than a threshold frequency, or a logic high if the frequency of the oscillator output is lower than the threshold frequency, respectively.

25. (original) The sensor of claim 24, wherein the connecting end of the second probe is coupled to ground.

26. (original) The sensor of claim 24, wherein the first probe is shorter than the second probe.

27. (original) The sensor of claim 24, wherein the conducting material includes a stainless steel.

28. (original) The sensor of claim 24, wherein each of the measuring end of the first probe and the measuring end of the second probe has a surface contactable with the media coating fluid, and the impedance between the measuring end of the first probe and the measuring end of the

second probe depends on the area of the surface of each of the measuring ends that is in contact with the media coating fluid.

29. (original) The sensor of claim 28, wherein when at least one of the first probe and the second probe is not in contact with the media coating fluid within the trough of the applicator, the measured impedance between the measuring end of the first probe and the measuring end of the second probe is high.

30. (original) The sensor of claim 28, wherein when both of the first probe and the second probe are in contact with the media coating fluid within the trough of the applicator, the measured impedance between the measuring end of the first probe and the measuring end of the second probe is low.

31. (original) The sensor of claim 24, wherein the oscillator outputs an AC signal through a resistor and capacitor.

32. (original) The sensor of claim 31, wherein the oscillator outputs an AC signal through the resistor in the form of a square wave.

33. (currently amended) The sensor of claim 31, wherein the ~~amplifier~~ oscillator comprises a comparator.

34. (canceled)

35. (currently amended) The sensor of claim [[34]] 24, wherein if the amplitude of the output signal is smaller than the gate threshold voltage, the field-effect transistor blocks the output signal.

36. (currently amended) The sensor of claim [[34]] 24, wherein the detector further comprises a capacitor electrically coupled between the output of the oscillator and the gate of the field-effect transistor.

37. (original) The sensor of claim 24, further comprising a fail-safe circuit performing a closed-loop status verification test to verify if the fluid level detection sensor functions properly before the applicator is filled with the media coating fluid.

38. (original) The sensor of claim 37, wherein the first probe has two wires, and the second probe has two wires, and the fail-safe circuit comprises:

    a. a transistor having a drain, a gate and a source; and

    b. a capacitor electrically coupled between the drain of the transistor and a wire of the first probe, wherein the source of the transistor is electrically coupled to a wire of the second probe, and the gate of the transistor is adapted to receive a control signal.

39. (original) The sensor of claim 38, wherein the two wires from each probe establishes conductivity only through the body of the probe.

40. (original) The sensor of claim 39, further comprising at least one nylon washer to isolate the first and second wires of each probe from each other.

41. (original) The sensor of claim 24, wherein each of the bodies of the first and second probes is substantially cylindrical.

42. (currently amended) A method for fluid level management in a media coating system, wherein the media coating system has an applicator with a trough to contain the media coating fluid, comprising the steps of:

a. determining media coating fluid level within the applicator against a predetermined upper refill limit and a predetermined lower refill limit, wherein the media coating step comprises:

i. measuring media coating fluid level within the applicator;

ii. generating a signal indicating that the fluid level is low if the media coating fluid level is lower than the predetermined upper refill limit;

iii. counting the number of pages coated since the fluid level reaches the predetermined upper refill limit; and

iv. determining if a media coating request is received; and

b. selectively transferring media coating fluid from a supply item to the trough of the applicator depending on the level of the media coating fluid against the predetermined upper refill limit and the predetermined lower refill limit and the status of the media coating system.

43. (canceled)

44. (currently amended) The method of claim [[43]] 42, wherein the step of selectively transferring media coating fluid, when a media coating request is received, comprises the steps of:

a. holding a media coating operation responsive to the media coating request if the number of pages coated since the fluid level reaches the predetermined

upper refill limit exceeds a first page number corresponding to the predetermined lower refill limit; and

b. transferring media coating fluid from a supply item to the trough of the applicator.

45. (currently amended) The method of claim [[43]] 42, wherein the step of selectively transferring media coating fluid, when a media coating request is received, comprises the steps of:

a. holding a media coating operation responsive to the media coating request if the number of pages coated since the fluid level reaches the predetermined upper refill limit is greater than the first page number corresponding to the predetermined upper refill limit but smaller than the second page number; and

b. transferring media coating fluid from a supply item to the trough of the applicator when the media coating operation is accomplished.

46. (original) The method of claim 45, wherein the step of transferring media coating fluid, when a media coating request is received, comprises the steps of:

a. holding the media coating operation responsive to the media coating page request once the number of pages coated is greater than the first page number corresponding to the predetermined lower refill limit; and

b. transferring media coating fluid from a supply item to the trough of the applicator.

47. (currently amended) The method of claim [[43]] 42, wherein the step of selectively transferring media coating fluid, when a media coating request is not received, comprises the steps of:

a. transferring media coating fluid from a supply item to the trough of the applicator if the number of pages coated since fluid level reaches the upper refill limit, is greater than the first page number corresponding to the predetermined upper refill limit.

48. (original) The method of claim 42, further comprising the steps of:

a. detecting the presence of the supply item; and

b. detecting the presence of the media coating fluid in the supply item.

49. (original) The method of claim 48, further comprising the step of replacing the supply item with a new supply item if no media coating fluid is detected in the supply item.

50. (original) The method of claim 48, where the step of detecting the presence of the supply item is accomplished by the use of an optical sensor.

51. (currently amended) The method of claim [[43]] 42, further comprising the steps of using a fluid level detection sensor to measure media coating fluid level within the applicator and performing a closed-loop status verification test to ensure that the fluid level detection sensor is functioning properly before the step of transferring the media coating fluid from the supply item to the applicator is initiated.

52. (original) The method of claim 51, wherein the fluid level detection sensor has a two probes configuration, and the step of using a fluid level detection sensor to measure media coating fluid level within the applicator is accomplished by measuring an impedance between the two probes.

53. (currently amended) The method of claim [[43]] 42, wherein the media coating system comprises a printer.

54. (original) The method of 53, wherein the media coating fluid includes ink and the media coating operation comprises a printing operation delivering the ink from the applicator to at least one sheet of paper.

55. (currently amended) The method of claim [[43]] 42, wherein the media coating system comprises a copy machine.

56. (currently amended) The method of claim [[43]] 42, wherein the media coating system comprises a fax machine.

57. (currently amended) A system for fluid level management in a media coating system used to coat a plurality of pages of media, wherein the media coating system has an applicator with a trough to contain the media coating fluid, comprising:

a. means for determining media coating fluid level within the applicator against a predetermined upper refill limit and a predetermined lower refill limit, wherein the means for determining the media coating fluid level comprises:

i. means for measuring media coating fluid level within the applicator;

ii. means for generating a signal indicating that the fluid level is low if the media coating fluid level is lower than the predetermined upper refill limit;

iii. means for counting the number of pages coated since the fluid

level reaches the predetermined upper refill limit; and

iv. means for determining if a media coating request is received.; and

b. means for selectively transferring media coating fluid from a supply item to the trough of the applicator depending on the level of the media coating fluid against the predetermined upper refill limit and the predetermined lower refill limit and the status of the media coating system.

58. (canceled)

59. (original) The system of claim 57, wherein the means for selectively transferring media coating fluid, when a media coating request is received, performs the steps of:

a. holding a media coating operation responsive to the media coating request if the number of pages coated since the fluid level reaches the predetermined upper refill limit exceeds a first page number corresponding to the predetermined lower refill limit; and

b. transferring media coating fluid from a supply item to the trough of the applicator.

60. (original) The system of claim 57, wherein the means for selectively transferring media coating fluid, when a media coating request is received, performs the steps of:

a. performing a media coating operation responsive to the media coating request if the number of pages coated since the fluid level reaches the predetermined upper refill limit is greater than the first page number corresponding to the predetermined upper refill limit but smaller than first second page number; and

b. transferring media coating fluid from a supply item to the trough of the

applicator when the media coating operation is accomplished.

61. (original) The system of claim 60, wherein the means for selectively transferring media coating fluid, when a media coating request is received, performs the steps of:

a. holding the media coating operation responsive to the media coating page request once the number of pages coated is greater than the first page number corresponding to the predetermined lower refill limit; and

b. transferring media coating fluid from a supply item to the trough of the applicator.

62. (original) The system of claim 59, wherein the means for selectively transferring media coating fluid, when a media coating request is not received, performs the step of transferring media coating fluid from a supply item to the trough of the applicator if the number of pages coated is greater than the first page number corresponding to the predetermined upper refill limit.

63. (original) The system of claim 57, further comprising:

a. means for detecting the presence of the supply item; and

b. means for detecting the presence of the media coating fluid in the supply item.

64. (original) The system of claim 57, wherein the means for detecting the presence of the supply item comprises an optical sensor.

65. (canceled)

66. (canceled)

67. (canceled)

68. (canceled)

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70. (canceled)

71. (canceled)

72. (canceled)

73. (canceled)

74. (canceled)